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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,093	01/26/2001	Feng Chen	4-10	7966

7590 04/08/2004

Docket Administrator
Agere Systems Inc.
P. O. BOX 614
Berkeley Heights, NJ 07922-0614

EXAMINER

CHANG, EDITH M

ART UNIT	PAPER NUMBER
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2634

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DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/772,093

Applicant(s)

CHEN ET AL.

Examiner

Edith M Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date Jan 26 2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Rewrite the first sentence "There is *disclosed* a digital filter or a receiver including a digital filter having at least two multiple stage shift registers." without using the word *disclosed*.

Claim Objections

2. Claims 1-32, and 36-37 are objected to because of the following informalities:

Claim 1, line 7 the term "inputs" in "a product of inputs" lacks antecedence. There is only one, input the "a first input," cited in the claim before the term "inputs"; line 8, "a top weight source" should be "a tap weight source".

Claim 11, "the digital filter is implemented a microprocessor" should be "the digital filter is implemented in a microprocessor"

Claim 16, line 7, "a top weight source" should be "a tap weight source".

Claim 36, "A method of filtering data, further comprising the steps of following step f" should be "A method of filtering data as recited in claim 35, further comprising the steps of following step f".

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 1-2, “tap weights received by the tap weights received by the tap weight shifter are more than one bit wide” does not clearly indicate what are more than one bit wide to what (the reference);

In line 3, the term “a bit width” in “having a bit width” does not clearly indicate the bit width is the same bit wide of the one bit wide cited in line 2, or a different one.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-5, 12, 16, 19-20, 27, 33, 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhou et al. (US 6625205 B1).

Regarding **claims 1, 12, 16 & 27**, Zhou et al. discloses digital filter /a receiver including a

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Digital filter (column 1 lines 5-15 wherein the reception apparatus is the receiver), comprising: at least two multiple stage shift registers (Fig.3 R11-R1n & R21-R2n); a plurality of multiplier corresponding in number to the number of stages in the at least two multiple stage shift registers (Fig.3 XOR1-XORn is the plurality of multipliers corresponding in number to the number of stages, the XOR with PN performs the product of its inputs) receiving an output from a stage of the at least two multiple stage shift registers as a first input; a tap weight shifter capable of circularly shifting tap weights (Fig.3 SREG) coupled to a tap weight source (Fig.3 PN) to provide a second input to each multiplier; and an adder (Fig.3 ADD) for summing the multiplier outputs to provide a sum output (Fig.3 Aout).

Regarding **claims 4 & 19**, Zhou et al. discloses the tap weights received by the tap weight shifter one bit wide (Fig.3 CLK0 R11-R1n, column 3 lines 28-42, column 3 line 65-column 4 line 3 wherein the tap weights is one bit wide for each one of R11-R1n).

Regarding **claims 5 & 20**, Zhou et al. discloses the tap weights received by the tap weight shifter more than one bit wide and having a bit width that is no greater than a bit width of stage of the shift registers (Fig.3 CLK1 R21-R2n, column 3 lines 28-42, column 3 line 65-column 4 line 3 wherein the tap weights are more than one bit wide of R21-R2n stage registers).

Regarding **claims 33 & 35-36**, Zhou et al. discloses a method of filtering digital data, comprising the steps of: a) shifting digital data into first and second/N multiple stage shift registers with L stages (Fig.3 R11-R1n & R21-R2n, N is at least 2, L is n); b) multiplying an output from each stage of the first and second/N multiple stage shift registers by an associated, respective tap weight to produce a plurality of products (R11-R1n->XOR1-XORn/R12-R1n->XOR1-XORn); c) combining the plurality of products to form a sum (Fig.3 Aout); d) circularly

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shifting the tap weights (Fig.3 PN SREG, column 3 line 65 - column 4 line 3); e) repeating steps b), c), and d) N-2 times (when N=2 the steps c),b),d) do one time and repeat N-2/zero time); and f) repeating steps b and c; and repeating steps a through f (column 3 lines 28-41).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3, 17-18, 34 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al. (US 6625205 B1) in view of Nishida (US 6229472 B1).

Regarding **claims 2-3, 17-18, 34 & 37**, Zhou et al. discloses the buffer A/D for receiving the input A_{in} , but does not explicitly specify it is a serial-input, parallel-output multiplier stage buffer for storing the N pieces of data prior to shifting into respective ones of the N multiple stage shift registers, however Nishida further teaches a serial-input, parallel-output multiplier stage buffer (FIG.5 13l-13m are multiplier stage buffer, V_{in} is the serial input, the outputs of 13l-13m are parallel-outputs) of A/D converter. As Zhou et al. using the A/D, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the serial-input, parallel-output multiplier stage buffer taught by Nishida implemented in Zhou et al.'s A/D to have an more efficient A/D converter with reduced power dissipation and occupied area (column 2 lines 54-58).

9. Claims 6-11, 21-26, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al. (US 6625205 B1) in view of Nishida (US 6229472 B1) as applied to claim 1 and claim 16 above, and further in view of Schilling (US 6366605 B1).

Regarding **claims 6 & 21**, Zhou et al. does not specify the software, however Schilling teaches the filter is implemented in software (column 2 line 64-column 3 line 5). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the Zhou et al.'s filter in software taught by Schilling to have an improvement filter with reduced error rate (column 1 lines 35-45).

Regarding **claims 7-8 & 22-23**, Zhou et al. does not specify the integrated circuit/ASIC, however Schilling teaches the filter is implemented in IC/ASIC (column 2 line 64-column 3 line 5). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the Zhou et al.'s filter in an IC/ASIC taught by Schilling to have an improvement filter with reduced error rate (column 1 lines 35-45).

Regarding **claims 9-11 & 24-26**, Zhou et al. does not specify the DSP/microcontroller/microprocessor, however Schilling teaches the filter is implemented in a DSP/software comprising microprocessor and microcontroller (column 2 line 64-column 3 line 5). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the Zhou et al.'s filter in a DSP/microcontroller/microprocessor taught by Schilling to have an improvement filter with reduced error rate (column 1 lines 35-45).

Regarding **claim 32**, further Schilling teaches the receiver is the base station (Abstract). The modified/combined receiver (refer to rationale of claim 16) is the base station.

10. Claims 13-14, 28-29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al. (US 6625205 B1) in view of Nishida (US 6229472 B1) as applied to claim 12 and claim 16 above, and further in view of Black et al. (6661833 B1).

Regarding **claims 13-14 & 28-29**, Zhou et al. discloses the shift register for weight source but not explicitly specify the ROM and RAM, however Black et al. teaches the ROM and RAM for PN sequence (column 11 lines 10-20). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the ROM/RAM taught by Black et al. for Zhou et al.'s PN to improve the acquisition of a CDMA system in a multiple system environment with different set of PN sequences (column 2 lines 24-40).

Regarding **claim 31**, further Black et al. teaches the receiver is the handset/mobile station (Abstract, column 2 lines 30-35). The modified/combined receiver (refer to rationale of claim 16) is a handset.

11. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al. (US 6625205 B1) in view of Nishida (US 6229472 B1) as applied to claim 12 and claim 16 above, and further in view of Gronemeyer (US 6044105).

Regarding **claims 15 & 30**, Zhou et al. discloses the shift register for generating weights but not explicitly specify the processor, however Gronemeyer teaches the processor of code generator (column 11 lines 1-2 in the section Load GPS PN code, wherein the processor redesigned as the code generator). At the time of the invention, it would have been obvious to a

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person of ordinary skill in the art to have the processor taught by Gronemeyer for generating weights to have a efficient receiver with low power and being fast (column 2 lines 50-55).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
March 25, 2004



**CHIEH M. FAN
PRIMARY EXAMINER**